

Rural and Community
Technology Development Planning

Preparing Nebraska's Communities for the Information Age

Prepared by the
Nebraska Information Technology Commission

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Executive Summary

Information technology is transforming the economy and society, creating a completely new paradigm. The new economy is marked by the growing importance of the IT industries to the U.S. economy, substantial increases in productivity due to investments in information technology, and new forms of e-commerce. In response to changing economic conditions, communities are finding that economic and community development processes need to be retooled. There is a clear need for information and training on how to utilize information technology as a community and economic development tool. However, Nebraska currently lacks a comprehensive approach to providing IT development training and assistance to communities.

This concept paper describes Information Age communities and the three cornerstones of Information Age communities: community leadership, telecommunications infrastructure, and intellectual infrastructure. In order to realize the benefits of the Information Age, communities need to address each of these cornerstones.

In order to facilitate the development of a statewide strategy on utilizing information technology as a development tool, the Nebraska Information Technology Commission has proposed forming a planning committee to make recommendations concerning the development of a comprehensive approach to providing IT development training and assistance to communities, especially as regards rural economic development issues.

The planning group will be charged with the following responsibilities:

- Inventory and assess current programs and strategies that address community IT leadership and planning, intellectual infrastructure, and telecommunications infrastructure in communities.
- Identify specific gaps, duplication and collaborative opportunities regarding information technology needs in communities, including community IT leadership and planning, intellectual infrastructure, and telecommunications infrastructure.
- Make recommendations regarding program development.
- Inventory community-based IT planning groups in the state.
- Work with the Technologies Across Nebraska initiative to review, make recommendations, and develop Information Technology toolkit resources for communities.
- Conduct a series of meetings with members of community IT committees to review the Planning Group activities outlined in this document and solicit feedback.
- Make action item and policy recommendations to the Community Council and the NITC by September 30, 2001.

Rural and Community Technology Development Planning Preparing Nebraska's Communities for the Information Age

Information technology is transforming the economy and society, creating a completely new paradigm. The new economy is marked by the growing importance of the IT industries to the U.S. economy, substantial increases in productivity due to investments in information technology, and new forms of e-commerce. Even with the recent economic downturn, e-procurement initiatives by businesses continue to increase.¹

The importance of knowledge-based, new economy industries to Nebraska's future economic development is emphasized in the Target Industry Study recently conducted for the Nebraska Department of Economic Development by Deloitte and Touche Fantus. The report recommends that Nebraska focus its economic development efforts on biotechnology, electronics manufacturing, and software development in addition to building upon existing core industries.²

In response to changing economic conditions, communities are finding that economic and community development processes need to be retooled. There is a clear need for information and training on how to utilize information technology as a community and economic development tool. However, Nebraska currently lacks a comprehensive approach to providing IT development training and assistance to communities.

The Community Council of the NITC has identified IT leadership development and training as the most important IT issue facing communities. In order to more effectively frame a discussion of this issue with stakeholders, this paper describes Information Age communities, discusses the three cornerstones of Information Age communities, and proposes a framework to more efficiently and effectively address the IT leadership development and training needs of Nebraska's communities.

What is an Information Age Community?

Information Age communities utilize information technologies to improve economic opportunities, expand educational offerings, provide better access to health care, more efficiently deliver government services, and provide community information. Information Age communities realize that information technology breaks down barriers of distance, opening new markets and allowing employees and business to locate virtually anywhere. Information Age communities promote the use of information technology in all sectors of the community. Because the development efforts of one sector or entity often spillover into other sectors, the outcome is synergistic.

Characteristics of an Information Age Community include:³

- High bandwidth services available to all businesses, organizations, and residents.

- Affordable access to telecommunications services. Affordable access and high speed access are often two different things. Both should be available in a community.
- Economic development initiatives tied to the needs of Information Age businesses. These efforts should include the development and support of local entrepreneurs and the development of a skilled workforce. Communities and regions, which can provide the intellectual infrastructure for using information technology, will give their local businesses a tremendous advantage.
- Online community information and services, including government, schools, and libraries. In many communities, information technology may be an effective and efficient way to improve access to health care.
- Connected citizens and civic groups. Information technology can be used to inform and involve citizens, building social capital. Communities in which institutions and citizens work well together are more successful in their development efforts.
- Careful attention to quality of life issues.
- Public access sites and free or affordable training on basic computer and Internet skills.

Blacksburg, Virginia pioneered the concept of an Information Age community. Back in the late 1980s, Virginia Tech proposed using telecommunications to connect residents by building a community network. Today, Blacksburg has the highest per capita use of the Internet in the world. Over 60 percent of Blacksburg's residents have high speed broadband access in their businesses and apartments. Over 24 technology companies have been started in Blacksburg in the last five years and the Virginia Tech Corporate Research Center is one of the fastest growing business parks in the nation.⁴

In Nebraska, Aurora is a good example of an Information Age community and the synergistic outcomes of Information Age development. Through a strategic planning process, Hamilton County developed a strategic information technology plan in 1994. The plan was updated in 1999. By bringing representatives of the key institutions in the county together and systematically addressing the IT needs of the county, Aurora and Hamilton County have begun to realize the benefits of the Information Age. Aurora's initial technology fair in 1994 increased community awareness of the importance of information technology and helped build community support for the deployment of information technology in the schools. The videoconferencing system in the hospital is used primarily for consultations and training for medical center and hospital staff, but is also available for use by local businesses. Hamilton Telecommunications has a telemarketing center and provides TDD services for five states. As demand for advanced services has grown, Hamilton Telecommunications has deployed DSL and ISDN in the community. Recently a software company moved to Aurora, attracted by the availability of office space, advanced telecommunications services, and the quality of life. A business incubator is set to open in 2001. In addition to attracting and assisting new business start-ups, the incubator program will provide a local e-commerce services and educational programming for all businesses in the community.⁵

Cornerstones of an Information Age Community

Information Age communities have three cornerstones: community leadership, telecommunications infrastructure, and intellectual infrastructure.

Community Leadership

The most successful IT efforts in communities--both in Nebraska and across the U.S.--have been locally driven. In fact, whether or not a community has a core group of committed, connected individuals is the single most important predictor of its success.

This core group often consists of 6-15 individuals. The core group usually has representation from key sectors and institutions in a community, including local government, economic and community development organizations, business, the library, education, and health care. IT professionals and industry representatives are also good resources.

Information Age development doesn't require community leaders who know all of the answers. It does require community leaders, however, who have the passion and commitment to find the answers. By building relationships within the community, community leaders can effectively utilize existing local resources. By contacting appropriate resources on the state, regional or national level, the community can also benefit. Examples of statewide resources in Nebraska include the Nebraska Information Technology Commission's Community Technology Fund, the University of Nebraska Extension's Nebraska Electronic Main Street e-commerce training program, and the Department of Economic Development's Community Development Block Grant program. Additionally, the Public Service Commission can provide information and assistance in addressing some of the regulatory issues which impact communities. Quite often, effective local community leaders are also active in professional organizations and participate in policy development at the state or federal level.

The Community Council of the NITC has identified 15 areas for communities to consider:

- Community Leadership and IT Planning
- Economic Development
- E-Commerce
- Agriculture
- Public Access and Universal Service
- Education
- Public Library Resources
- Health Care
- Technology Training and Retention
- Broadband Services and Infrastructure
- Local Government and Community Services
- Law Enforcement and Emergency Services
- Geographic Information Systems (GIS)
- Arts, Culture, History, and Non-profits
- Funding Strategies

Each of these areas is covered in the Building Information Age Communities Community Assessment (<http://www.nitc.state.ne.us/itc/community/building.pdf>). The assessment is designed to help a community identify how information technology is currently being utilized and to suggest additional ways in which information technology may be utilized as a community and economic development tool. A community just starting out may want to identify two or three of these areas on which to focus initially. As the community's efforts mature, it may want to expand its focus.

To be successful, communities need the support of key institutions, including city and county governments, businesses, schools, libraries, and health care facilities. The emphasis on community-wide IT development recognizes the synergistic nature of development efforts in general, and IT development efforts in particular. By providing training and technical assistance, the state agencies and associations serving these constituencies can play a key role in building Information Age communities in the state. The effectiveness of these efforts will be enhanced by developing a coordinated approach to IT development within the state.

Intellectual Infrastructure

Intellectual infrastructure refers to the human capital required for IT development. Intellectual infrastructure encompasses a wide range of knowledge, skills, and abilities.

The most basic level focuses on core teleliteracy skills. In order to encourage the acquisition of basic computer and Internet skills, communities should have public access terminals and free or low-cost classes on basic computer and Internet operations. In order to be fluent in information technology, individuals also need to understand the basic concepts on which information technology is founded and to apply their IT skills and knowledge to their workplace and everyday life.⁶ Community leaders need to work with educational providers to ensure that diverse training opportunities are available within the community.

Small business owners and managers in Nebraska indicate that their biggest challenges are related to intellectual infrastructure issues. A new study on the use of information technology by Nebraska businesses conducted by the AIM Institute in cooperation with the University of Nebraska found that over 70 percent of the business owners and managers surveyed felt that their greatest challenge was understanding the opportunities available using the Internet.⁷ In contrast, only 10 percent indicated that access to broadband services was currently a barrier to their businesses. Community leaders and economic development organizations need to address the e-commerce training needs of small businesses.

The availability of IT support services also needs to be addressed. Nearly half of the business owners and managers indicated that the skills needed to implement IT into their business plans were not present in their organization. Approximately one-third believed that such skills were not available locally. Communities and regions, which can provide the support services for using information technology, will give their local businesses a tremendous advantage. Other issues related to intellectual infrastructure include youth retention and entrepreneurship development. Both of these issues were identified as critical to the state's future competitiveness by the Target Industry Study recently conducted for the Nebraska Department of Economic Development by Deloitte and Touche Fantus⁸.

Telecommunications Infrastructure

Within the past year, we have seen advances in the use of satellite, wireless, DSL, and cable technologies to provide broadband services. In many small Nebraska communities, however, the options for broadband services remain limited.

Some Nebraska communities are finding that businesses which are heavy users of information technology are relocating to areas with better access to telecommunications services and skilled IT workers. While smaller communities may be especially vulnerable, even Nebraska's larger communities are not fully prepared to face the challenges of the Information Age. Gallup's decision to relocate to Omaha has forced the city of Lincoln to reexamine the importance of telecommunications infrastructure to its economic development strategies.

Although the relocation of large businesses may garner more attention from the media, the availability of broadband services also impacts small businesses. Phil Burgess and Flo Raitano have written a very compelling article available from the Center for the New West detailing what they call "the other digital divide."⁹ There are nearly 22 million businesses in the United States. Only 15,000 are large businesses with over 500 employees. The other 21 million are small to mid-size businesses. All of the largest businesses have high speed Internet access. These large businesses are utilizing business to business e-commerce because they enjoy substantial cost savings.

In contrast, most small to mid-size businesses do not have high-speed Internet access. Most small to mid-size businesses however have some sort of a relationship with big businesses either as a supplier or a customer. The big businesses are driving their customers and suppliers to use e-commerce. And the small to mid-size businesses which make up the majority of businesses in rural communities are struggling to keep up. Without access to affordable broadband services, these businesses can't compete in the new economy.

Schools, health care systems, libraries, and local governments also often require access to broadband services. Aggregating local and/or regional demand has been used successfully in a number of communities, regions, and states across the United States¹⁰. The State of Nebraska is currently in the process of aggregating its demand and developing an RFP for a prime contractor. Communities in Nebraska have an opportunity to document their aggregated demand and piggyback onto the RFP being developed by the State of Nebraska. Unfortunately, many Nebraska communities are not yet organized to take advantage of this opportunity.

Another strategy that has been successfully employed is stimulating demand through education and training. Because most Nebraska businesses are in the early stages of adopting e-business practices, targeting training at local businesses may effectively stimulate the demand for broadband services.

LB 827, if enacted, would provide additional tools to address the availability of broadband services. The bill allows public entities to lease excess dark fiber to telecommunications providers. Several communities across the United States have encouraged competition and accelerated the deployment of advanced services by installing fiber loops and leasing the excess

capacity to telecommunications providers. The bill also creates the Nebraska Internet Enhancement Fund which would provide grants to communities for IT infrastructure projects. Additionally, the bill amends the Local Option Municipal Economic Development Act to include the provision of new services, specifically telecommunications services.

Community leaders need a basic understanding of broadband technologies and the strategies that can be utilized to encourage the deployment of advanced services.

Addressing the IT Training Needs of Nebraska's Communities

Although a small number of programs and resources address specific areas of Information Age development, there is currently no comprehensive, coordinated state-wide approach to Information Age development in Nebraska. In order to be effective, a community IT leadership and training initiative must:

1. Offer a coordinated approach to IT leadership and training
2. Provide resources for communities, focusing on the three cornerstones: IT leadership development and training, telecommunications infrastructure development, and intellectual infrastructure development.
3. Have the support of key stakeholders
4. Have a long-term commitment from all project partners

In order to facilitate the development of a statewide strategy on utilizing information technology as a development tool, the Nebraska Information Technology Commission has proposed forming a planning committee to make recommendations concerning the development of a comprehensive approach to providing IT development training and assistance to communities, especially as regards rural economic development issues. The planning group will be comprised of representatives from the Department of Economic Development, the Rural Development Commission, the Public Service Commission, the University of Nebraska, the Community College system, the Community Council of the NITC, the League of Nebraska Municipalities, the Nebraska Association of Counties, Nebraska's Congressional delegation, and other stakeholders.

The mission of the planning group is to make recommendations concerning the development of a comprehensive approach to providing IT development training and assistance to communities, especially as regards rural economic development issues.

The planning group will be charged with the following responsibilities:

- Inventory and assess current programs and strategies that address community IT leadership and planning, intellectual infrastructure, and telecommunications infrastructure in communities.
- Identify specific gaps, duplication and collaborative opportunities regarding

information technology needs in communities, including community IT leadership and planning, intellectual infrastructure, and telecommunications infrastructure.

- Make recommendations regarding program development.
- Inventory community-based IT planning groups in the state.
- Work with the Technologies Across Nebraska initiative to review, make recommendations, and develop Information Technology toolkit resources for communities.
- Conduct a series of meetings with members of community IT committees to review the Planning Group activities outlined in this document and solicit feedback.
- Make action item and policy recommendations to the Community Council and the NITC by September 30, 2001.

About the NITC and the Community Council

The NITC was established by the Legislature in 1998 to establish a statewide strategy for information technology development in Nebraska and to make recommendations regarding information technology investments to the Governor and the Legislature. The NITC consists of nine members appointed by the Governor and confirmed by the Legislature. Members include representatives of K-12 and post-secondary education, communities and the general public. The NITC has three advisory councils in the areas of State Government, Education and Community. In addition, the Technical Panel performs reviews of new and additional technology and originates standards and guidelines.

The Community Council consists of representatives from agriculture, business, health care, libraries, local government, and resource providers. The Community Council normally meets monthly to make recommendations to the NITC. The Community Council is also charged with overseeing the administration of the Community Technology Fund, which provides grant funding for information technology projects in communities.

Information on the NITC and the Community Council can be found at the NITC Web site located at www.nitc.state.ne.us.

¹ National Association of Purchasing Management, "NAPM/Forrester Research Report On eBusiness," April 2001, (<http://www.napm.org/NAPMReport/Forrester/FROB042001PR.cfm>).

² Deloitte & Touche Fantus, "Target Industry Study," December 1, 2000 (<http://www.neded.org/TargetedIndustries.htm>)

³ These characteristics are drawn primarily from "Building eCommunities: Getting Everyone Connected" by Andrew Michael Cohill, (http://www.bev.net/project/digital_library/).

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- ⁴ Andrew Michael Cohill, "Building eCommunities: Getting Everyone Connected," (http://www.bev.net/project/digital_library/).
- ⁵ Anne Byers, *NITC.news*, "Aurora: Planning for the Future", (<http://www.nitc.state.ne.us/cc/best%20practices/Aurora.htm>).
- ⁶ National Academy of Sciences, "Being Fluent with Information Technology," 1999 (<http://stills.nap.edu/html/beingfluent/>)
- ⁷ Robert E. Sweeney, *Nebraska Business Use of Information Technology*, February 2001, (<http://www.aimlink.org/studies/2001/report.htm>).
- ⁸ Deloitte & Touche Fantus, "Target Industry Study," December 1, 2000 (<http://www.neded.org/TargetedIndustries.htm>)
- ⁹ Phillip M Burgess & Florine P. Raitano, "The 'Other' Digital Divide," September 1999, (http://www.newwest.org/technology_society/digital_divide/OtherDigitalDivide.pdf).
- ¹⁰ Andy Oram, *Webreview.com*, "Bringing the Internet to the Masses", June 16, 2000, (<http://webreview.com/wr/pub/2000/06/16/platform/index.html>)

Nebraska Information Technology Commission

-Rural and Community Technology Development Planning Group Charter--

1. Introduction

The Rural and Community Technology Development Planning Group is an advisory committee (hereafter referred to as "Planning Group") of the Community Council of the Nebraska Information Technology Commission (hereafter referred to as "Commission"). The Planning Group is composed of representatives from the Department of Economic Development, the Rural Development Commission, the Public Service Commission, the University of Nebraska, the Community College system, the Community Council of the NITC, the League of Nebraska Municipalities, the Nebraska Association of Counties, Nebraska's Congressional delegation, and other stakeholders.

2. Purpose of Charter

The purpose of this charter is to provide operational guidance to the Planning Group members and to provide general information to all who read the proceedings and recommendations of the Planning Group.

3. Authority

The authority for the Planning Group is derived from Section 6-7 of LB924 passed April, 1998. LB 924, Sec 6-7. "Establish ad hoc technical advisory groups to study and make recommendations on specific topics, including work groups to establish, coordinate, and prioritize needs for education, local communities, and state agencies[.]" NEB. REV. STAT. § 86-1506(7).

4. Building Information Age Communities Planning Group Mission and Responsibilities

4.1 Planning Group Mission

The mission of the Planning Group is to make recommendations concerning the development of a comprehensive approach to providing IT development training and assistance to communities, especially as regards rural economic development issues.

4.2 Planning Group Responsibilities

4.2.1 Inventory and assess current programs and strategies that address community IT leadership and planning, intellectual infrastructure, and telecommunications infrastructure in communities.

4.2.2 Identify specific gaps, duplication and collaborative opportunities regarding information technology needs in communities, including community IT leadership and planning, intellectual infrastructure, and telecommunications infrastructure.

4.2.3 Make recommendations regarding program development.

4.2.4 Inventory community-based IT planning groups in the state.

4.2.5 Work with the Technologies Across Nebraska initiative to review, make recommendations, and develop Information Technology toolkit resources for communities.

4.2.6 Conduct a series of meetings with members of community IT committees to review the Planning Group activities outlined in this document and solicit feedback.

4.2.7 Make action item and policy recommendations to the Community Council and the NITC by September 30, 2001.

5. Membership

5.1 Representatives

The Planning Group will be comprised of representatives from the Nebraska Information Technology Commission, Nebraska Department of Economic Development, Nebraska Public Service Commission, Nebraska Rural Development Commission, University of Nebraska, Community Colleges, League of Nebraska Municipalities, Nebraska Association of Counties, Nebraska's Congressional delegation, and other stakeholders.

5.2 Member Responsibilities

Each member is responsible for maintaining two-way communication with their organization and constituents concerning issues brought before the Planning Group.

6. Meeting Procedures

6.1 Chair(s)

The Planning Group will select a chair or co-chairs.

6.2 Staff Support

The NITC will provide staff support to the Planning Group.

7. Duration of the Charter

The Planning Group's charter will expire on September 30, 2001 unless renewed by the Community Council.